

Act 179 Report

*Recommendations for a group net-metering successor program
Draft for Review, December 2024*

Executive Summary

In 2024, the Vermont General Assembly enacted Act 179, reforming Vermont’s Renewable Energy Standard (“RES”). As part of these reforms, Act 179 ended the virtual Group Net Metering (“GNM”) program for all applications after December 31, 2024 with one exception for developers of affordable housing. Act 179 also tasked the Department of Public Service (“Department”) with developing a report to discuss and prioritize recommendations for a successor program for GNM, while also reporting on several issues such as current utility programs and funding opportunities for income-eligible customers and affordable housing (see [Section 1](#) for an overview).

After a series of meetings with core partners, information requests, and reviewing existing best practices and community engagement efforts related to community solar programs, the Department makes the following three recommendations to be considered together as a package:

1. Establish the Renewable Energy for Communities (“RE4C”) program.

The legislature should direct the Public Utility Commission (“PUC”) to establish a “Renewable Energy for Communities” program to guide and support development of renewable, distributed generation that seeks to benefit communities who have historically faced barriers to accessing the benefits of investing in renewable energy, while also helping utilities cost-effectively meet their distributed generation requirements under the Renewable Energy Standard.

2. Reform compensation in the net-metering program and implement other renewable energy policy cost containment mechanisms.

The Public Utility Commission should open a proceeding to reform compensation in the net-metering program to appropriately reflect the value that generation provides to ratepayers. In doing so, the PUC should consider whether compensation reform should be combined with other changes to the program, including lifting the 500 kW size limitation and/or reinstating virtual group net-metering if compensation reform reflects the value of generation.

3. Alternative mechanisms should be considered to broadly support the financial barriers to advancing decarbonization and electrification of buildings.

The best way for a group net-metering successor program to help affordable housing and others facing financial barriers to electrification is by ensuring that net-metering and other renewable energy programs do not increase electric rates more than absolutely necessary. The goal should be to reduce the cost of electrification measures in a manner that avoids increasing the cost of electricity, which would increase the cost of electrification.

The rationale for these three recommendations in addition to the other reporting requirements established by Act 179 are detailed throughout this report, which proceeds as follows:

- [Section 2](#) provides an overview of the Department’s approach to developing the report
- [Section 3](#) offers background context on the net-metering program and the relevant policy landscape in Vermont

- [Section 4](#) defines the key objectives outlined in Act 179 for a successor program and Vermont’s frontline and impacted communities considered in this work.
- [Section 5](#) reviews current programs the electric distribution utilities offer for income-eligible customers
- [Section 6](#) discusses existing funding opportunities for solar and other energy-related projects benefitting affordable housing and customer with low-income
- [Section 7](#) offers three recommendations for next steps in development of a successor program.
- **The Appendices** offer supplemental materials:
 - **Appendix A:** Partner Meeting #1 Department of Public Service Slides - Frames the context for the report, with notes from the meeting discussion about impacts and prioritization
 - **Appendix B:** Partner Meeting #2 Brainstorm - Illustrates the output of a brainstorming session where meeting participants considered pros, cons, and remaining questions about how current program models lead to economic, social, and environmental impacts
 - **Appendix C:** Meeting 3 Discussion Questions & Program Summary - Provided by the Department to meeting participants summarizing presentations from Meeting 2 and offering discussion questions for Meeting 3.
 - **Appendix D:** Partner Meeting #3 Brainstorm – Includes the output of a discussion about the definitions of program objectives outlined in Act 179 and discussion questions outlined in Appendix C.
 - **Appendix E:** *Renewable Energy for Communities* Draft Language

1. Requirements in Act 179

In 2024, the Vermont General Assembly enacted Act 179, reforming Vermont’s Renewable Energy Standard (“RES”). As part of these reforms, Act 179 ended the virtual Group Net Metering (GNM) program for all applications after December 31, 2024 with one exception for developers of affordable housing. A one-year extension of the sunset was granted for systems that serve “a multifamily building containing qualified rental units serving low-income tenants, as defined under 32 V.S.A § 5404 (a)(6).”

Act 179 tasks the Department of Public Service with developing a report to discuss and prioritize recommendations for a successor program. Specifically, Act 179 states that:¹

The goal of this report is to develop a replacement program for group net metering to reduce operating costs, reduce resident energy burdens, and encourage electrification and decarbonization of buildings and enhance the financial capacity of housing providers to electrify the buildings developed or rehabilitated and provide relief to residents of manufactured home communities from their energy burdens. This report shall:

(1) Discuss and prioritize recommendations for replacement programs based on how they would impact Vermont’s impacted and frontline communities and identify opportunities for these communities to benefit from investments in renewables to adapt to climate and economic change within the framework of a replacement of the net-metering program.

(2) Discuss current programs electric utilities have in place to serve income-eligible customers, the number of participants in those programs, and their trends over time.

(3) Discuss progress affordable housing funders and developers have made to date in connecting projects with solar resources, as well as any barriers to this, and the comparison of the availability and cost of net metered installations on single-family dwelling units.

(4) List funding sources available for solar and other energy-related projects benefiting affordable housing and customers with low-income, including if it is federal or time-limited.

(5) Propose comparable successor programs to group net-metering for connecting affordable housing developments and income-eligible residents of manufactured home communities with solar projects in order to reduce operating costs, reduce resident energy burdens, and encourage electrification and decarbonization of buildings. Programs that meet the intent of this section shall include the following:

(A) a process to bring additional solar or other renewable energy projects online that could be owned by affordable housing developers;

(B) a process to enroll eligible customers, including property owners of qualified rental units; and

¹ Act 179 of 2024 is available at <https://legislature.vermont.gov/Documents/2024/Docs/ACTS/ACT179/ACT179%20As%20Enacted.pdf>

(C) if connecting directly to customers, a bill credit process to allocate a customer's kWh solar share on a monthly basis.

Act 179 also requires the Department to consult with several partners, specifically: the Public Utility Commission, the Vermont Housing Finance Agency, Vermont Housing and Conservation Board, Evernorth, Green Mountain Power, Vermont Electric Cooperative, the Vermont Public Power Supply Authority, other electric utilities that wish to participate, and the Office of Racial Equity.

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2. Approach to Developing the Report

To meet the reporting requirements, the Department developed a three-part working meeting series with key partners and a series of information requests to the electric distribution utilities and affordable housing community. These efforts are described in this section, with supplemental materials linked in the Appendices. Key learnings from these efforts are integrated throughout this report.

Partner Meeting Series

The Department convened a three-part working meeting series with key partners involved with developing programs for and/or planning around community solar, energy burden reduction, and building decarbonization. The objective was to facilitate conversation and collaboration amongst a diverse array of perspectives.

As noted in [Section One](#), Act 179 required the Department to consult with several specific partners. Members of each of these organizations were invited to participate in the series. In addition, the Department recognized that the statutorily directed stakeholders would not provide a sufficient breadth or depth of perspectives. The Department thus issued targeted invitations to a broader set of partners beyond the group identified in Act 179 to diversify the perspectives represented in these conversations. This included:

- **Vermont Association of Planning and Development Agencies** (“VAPDA”) – to represent Regional Planning Commissions
- **Vermont League of Cities and Towns** (“VLCT”) – to represent Vermont’s municipalities
- **Vermont Natural Resources Council** (“VNRC”) & **Vermont Energy and Climate Action Network** (“VECAN”) – to represent town energy committees and the environmental community
- **Vermonters for a Clean Environment** (“VCE”) – to represent community advocates and the environmental community
- **Vermont Law School** (“VLS”) **Energy Clinic** – to represent an academic perspective conducting broader research on community solar in the United States
- **Renewable Energy Vermont** (“REV”) – to represent the renewable energy developer industry
- **Acorn Renewable Energy Co-op** – to represent a community-based renewable developer with expertise in community solar
- **Vermont Superintendents Association** (“VSA”) – to represent schools
- **Southeastern Vermont Community Action** (“SEVCA”) – to represent a community action agency perspective with specific experience running a community solar program
- **Members from House Energy & Environment** (“HEE”) and **Senate Natural Resources & Energy** (“SNRE”) – to represent the two primary legislative committees of jurisdiction

Many, although not all, of the invited partners were able to attend at least one of the three meetings, and many were able to participate in the full series. For those unable to attend, Department staff offered to connect one-on-one and provided written comment opportunities between meetings.

The meeting series was held fully virtually and facilitated by Department staff, taking the following structure:

- **Meeting 1 (September 6, 2024)** focused on introducing participants and the perspectives they were bringing to the conversation to each other and reviewing the requirements of the report. The meeting also sought feedback on defining core terminology around Vermont's frontline & impacted communities and the types of impacts (economic, social, and environmental) a successor program might have, discussing prioritization criteria for recommendations.
- **Meeting 2 (September 19, 2024)** focused on reviewing current and proposed models to connect communities with solar from a variety of perspectives and discussing their economic, social, and environmental impacts. The meeting featured presentations from Evernorth, Vermont Electric Cooperative, the Department of Public Service, SEVCA, and Vermont Law School on programs both within and outside of Vermont, both within and outside of the current group net-metering framework. Following the presentation, meeting participants worked to distil themes on what works about current programs to carry forward, challenges that need to be addressed, and areas for additional research or discussion, through both written exercises and discussion.
- **Meeting 3 (October 10, 2024)** focused on defining the objectives of a successor program outlined in Act 179 and reviewed the example program models from Meeting 2 through the lens of those objectives. Participants also discussed possible recommendations for a successor program. Prior to this meeting, the Department circulated a summary of the program models presented on in Meeting 2 and discussion questions. Following the meeting, participants also had a week to provide additional written comments on the discussion questions. The Department received additional comments from Vermont Housing Finance Authority and Evernorth.

Data Collection & Information Requests:

Act 179 required the Department to report on existing utility programs for income-eligible customers and efforts to connect affordable housing with solar and the barriers to and costs of doing so, among other requirements. To address these two requirements, the Department issued two information requests:

- **Electric Distribution Utilities:** An information request was issued to each of the distribution utilities asking for a variety of information on their current programs for income-eligible Vermonters including income eligibility threshold and determination, funding source, benefit per customer, and participation over time. All the utilities responded.
- **Affordable Housing Developers:** In addition, the Department worked in partnership with Vermont Housing & Conservation Board to field an information request to affordable housing developers to better understand their progress connecting projects with solar over the last 10 years, the costs of housing developments connected with solar in the last two years, and barriers they face when seeking to connect affordable housing with solar. The

information request was circulated to 10 affordable housing organizations in Vermont, six of whom responded.

Public Comment Period:

A draft of this report was issued for public comment in early December 2024. This section will be updated following the public comment period with a summary of the comments received and how they were addressed.

A Note on Community Engagement:

The time allotted by Act 179 for this report was insufficient to conduct robust and meaningful engagement with Vermonters who would be most impacted by a group net-metering successor program and the community-based organizations that directly serve them. Regardless, at the outset of the planning for this effort, the Department explored opportunities to engage with Vermont’s frontline and impacted communities who would participate in and benefit from the programs informed by this report’s recommendations. This included discussions with partners such as the Vermont Climate Action Office (“CAO”), the distribution utilities, and Northeastern Vermont Development Association on potential engagement efforts, such as tabling at community events or a broad-based survey, to reach impacted communities.

After exploring numerous ideas, Department staff re-affirmed its position that there was not enough time to develop meaningful opportunities to engage with these communities within the timeframe and resources given to conduct the report. Instead, the Department relied on existing engagement efforts (ex. the engagement efforts conducted by the Department during its review of renewable and clean energy programs and policies,² CAO Community Engagement quarterly reports,³ Vermont Electric Cooperative annual member survey⁴), and the perspectives identified partners brought to meeting series given their experiences running similar programs. Any future process to develop and implement a successor program based on the recommendations in this report, or otherwise, should include allocated time and resources to support engagement with frontline and impacted communities as is deemed necessary to shape program design to ensure it is accessible to the communities who will benefit most from it.

² The final report on the Departments program and policy review, including an overview of and links to community engagement efforts is available at <https://publicservice.vermont.gov/sites/dps/files/documents/Clean%20%26%20Renewable%20Electricity%20Review%20Final%20Report.pdf>

³ The Vermont Climate Action Office currently publishes quarterly reports on their public outreach activities to elevate Vermonters’ voices on Climate. The most recently quarterly report was published in Q3 2024 ([available here](#)) and includes links to all previous reports on page eight.

⁴ Vermont Electric Cooperative currently conducts annual surveys of its residential members. Survey results from 2024 and previous years are available at: <https://vermontelectric.coop/member-surveys>

3. Setting the Context: Vermont’s Net Metering Program & Related Policy Landscape

The Net-Metering Program in Vermont

Net-metering offers a mechanism for residents, businesses, and communities to develop small-scale renewable energy. Net-metering “means measuring the difference between the electricity supplied to a customer and the electricity fed back by the customer’s net-metering system during the customer’s billing period.”⁵ The net-metering program provides a way for customers to self-generate electricity from small-scale renewable energy (like solar) and receive a payment at a pre-determined rate for any electricity they generate. Vermont’s net-metering program was first enacted by the General Assembly in 1998, at the time limited to systems of 15 kW or less and for a total program capacity capped at 1% of a utility’s peak demand.⁶ When it was developed, the General Assembly noted the use of the net-metering was in the public interest due to its ability to encourage private investment in renewable resources, stimulate economic growth in Vermont, and diversify the state’s energy resources.⁷

Over the last 25 years net-metering has evolved significantly, with iterative changes to the program. Group net-metering (“GNM”) was authorized by the Legislature beginning in 2002. GNM allowed generation from net-metered systems to be shared across multiple customers or accounts and was initially restricted to use by farmers. This was extended to all customers in 2008, initially restricting the program to systems of 250 kW or smaller and capping the amount of generation developed through the program at 2% of a utility’s peak load. Since its inception, GNM has offered pathways to participate in the net-metering program for customers who face barriers to participating in net-metering broadly, including not having suitable sites to install generation, lack of ownership of the property, or ability to access enough capital to invest up front.

Along with the addition of GNM, the program has shifted to increase the size of generation eligible to be developed (now up to 500 kW) and the overall amount of generation that can be developed via net-metering (currently no program cap). How generation from net-metered systems is compensated has evolved as well. Today, under net-metering 2.6, the most recent compensation scheme approved by the Public Utility Commission⁸, new net-metered systems could receive compensation between \$0.10398-\$0.14398 per kWh, depending on category.⁹

⁵ 30 V.S.A § 8002(15)

⁶ More detailed histories of the net-metering program in Vermont are available in Public Utility Commission Orders issues in recent net-metering biennial proceedings, such as *In re:biennial update of the net-metering program*, Case No. 24-0248-INV Order issued 05/30/2024.

⁷ See PSB Order in Case No. 6181, *Investigation into the Use of a Net Metering System for the Purchase and Sale of Electricity from Small Electrical Generating Systems to and from Electric Companies*, issued 04/21/1999. Available from <https://puc.vermont.gov/sites/psbnew/files/orders/6181fnl.pdf>

⁸ Order issued 05/30/2024 in Case No. 24-0248-INV

⁹ These rates assume a customer assigns the Renewable Energy Certificates (“RECs”) from the generation to their utility for relatively higher compensation. If customers elect to retain the RECs, these rates will be less \$0.04/kWh. These rates are based on the statewide blended retail rate and there may be small variations by utility, and it should be noted that the overall compensation rates go up as utility rates increase.

Since the inception of the net-metering program, Vermont’s solar market has transformed. There are now over 593 MW of distributed renewable generation (projects up to 5 MW) installed across Vermont, including 526 MW of solar.¹⁰ Installed, distributed solar represented approximately 60% of Vermont’s peak demand in 2023,¹¹ one of the highest saturations in New England.¹² Of the 526 MW of distributed solar, 366 MW (70%) has come from the net-metering program, made up of over 22,000 generators across Vermont, many of which are small residential systems. In Green Mountain Power (“GMP”) service territory, which includes 311 MW of net-metered solar (85% of the statewide total), roughly 66% of the projects represent group net-metered systems, serving over 7,400 GMP customers.¹³

While net-metering has supported installation of a significant amount of solar, generation developed through the net-metering program is currently – and has historically been – one of the most expensive source of renewable energy generation for utilities to purchase, as illustrated in **Figure 1**.

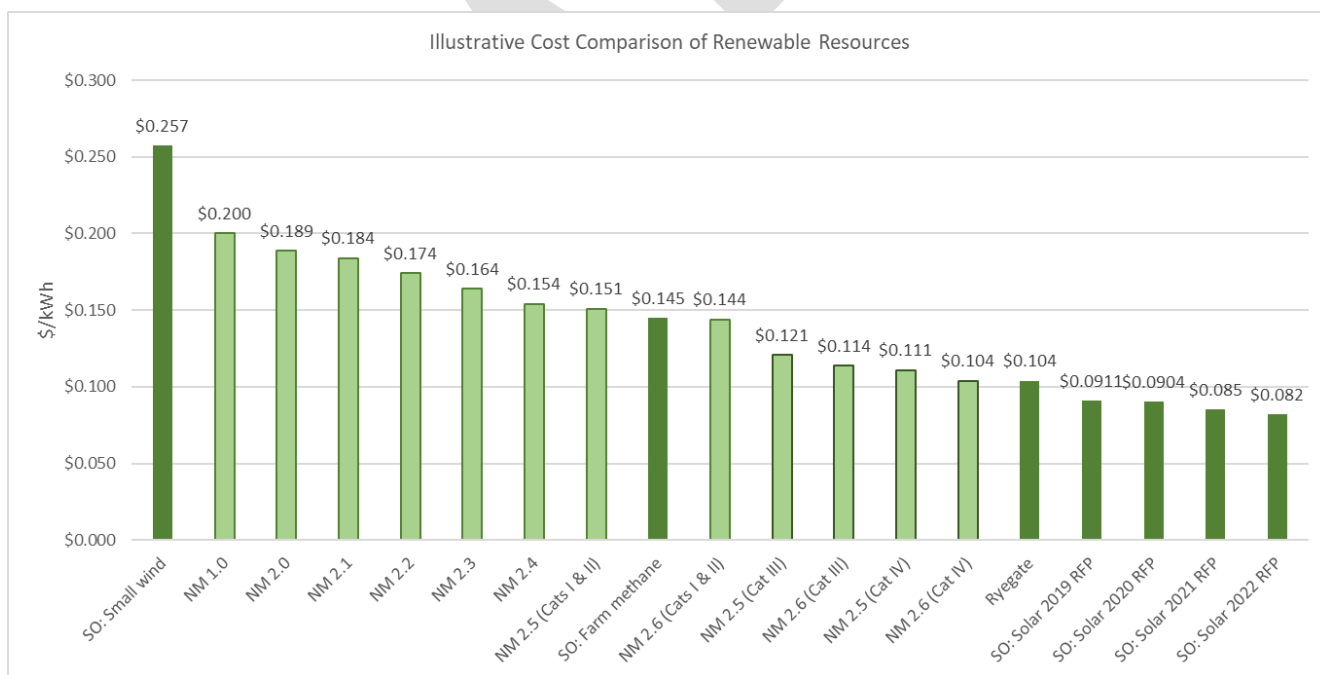


Figure 1. Illustrative cost comparison of renewable resources in Vermont, including the Net-Metering Program (light green bars). **NM** = Net-Metering, **SO** = Standard Offer. *Source: Department of Public Service*

¹⁰ Data from the distribution utilities submitted to the Department through the ISO New England Distributed Generation Survey. Current as of November 2024.

¹¹Based on 507 MW installed solar through calendar year 2023 and a 2023 coincident peak (i.e. at the time of the ISO New England peak demand) of 735 MW.

¹² For example, in 2023 Massachusetts had 3712 MW of installed solar at the end of calendar year 2023, which represented roughly 33% of the state’s ISO New England coincident peak demand (11,178MW). *Source: ISO New England.*

¹³ Data provided to the Department of Public Service by Green Mountain Power via email in November 2024.

As noted in the Department’s *2023 Annual Energy Report Appendix C: Report of Vermont Net-Metering Program*¹⁴, “(b)ased on data collected from each utility, the cost of net-metering in 2021 was more than \$49 million higher than the market value of the products provided.”¹⁵ Recent utility provided information suggests the above-market costs have continued to increase, exceeding \$55 million in 2024.¹⁶ These above-market value purchases create upward pressure on rates, shifting costs disproportionately onto customers who do not, or are unable to, participate in the program. Virtual group net-metered systems disproportionately contribute to this cost shift since all the generation they produce is considered “excess generation” since it does not directly offset electricity consumption from a building, effectively acting like a grid-scale solar project but at a much higher cost to ratepayers. In addition, certain communities, including renters and those with low income, have disproportionately faced barriers to participating in the net-metering program, exacerbating the relative burdens shifted onto these communities. Communities historically facing inequitable access are further discussed in [Section Four](#).

Current Policy Landscape

As the solar market has transformed in Vermont, so too has Vermont’s renewable energy and climate policy landscape. In 2015, Vermont enacted its first Renewable Energy Standard (“RES”), requiring all distribution utilities to purchase 75% of their electricity from renewable energy by 2032, 10% of which had to come from distributed, small-scale, and in-state generation. Since the obligations went into effect in 2017, Vermont’s distribution utilities have met, and at times exceeded, these requirements. In 2023, for example, Vermont’s electricity was 80.5% renewable (accounting for retirements of RECs) compared to a requirement of 63%.¹⁷ In 2024, Act 179 updated Vermont’s RES, now requiring that 100% of the electricity purchased by utilities come from renewable energy by 2035.¹⁸ In addition, by 2035 most of the state’s utilities are required to purchase 20% of their electricity from small, distributed generation located in Vermont.

As Vermont’s electricity becomes increasingly renewable, the state’s emissions from the electricity sector will continue to decline – although it currently only accounts for only 2.6% of greenhouse gas

¹⁴ Available at

https://publicservice.vermont.gov/sites/dps/files/documents/2023%20Vermont%20Annual%20Energy%20Report_0.pdf

¹⁵ VERMONT DEPARTMENT OF PUBLIC SERVICE, *2023 Annual Energy Report: A summary of progress made toward the goals of Vermont’s Comprehensive Energy Plan – Appendix C: A Report on Vermont Net-Metering Program* (Jan. 15, 2023), at C-10 on pg. 112 available at

https://publicservice.vermont.gov/sites/dps/files/documents/2023%20Vermont%20Annual%20Energy%20Report_0.pdf.

¹⁶ Data from the distribution utilities analyzed by the Department of Public Service and collected through the Department’s *2024 Annual Resource Survey* to the utilities.

¹⁷ Compliance filings by the utilities in Case No. 24-0775-RES

¹⁸ The specific milestone years and certain requirements vary by type of utility, with some utilities required to purchase 100% renewable electricity earlier than 2035. Three utilities in the state, Washington Electric Cooperative, Swanton Electric Department, and Burlington Electric Department, are already 100% renewable.

emissions.¹⁹ As the state works to address the more challenging task of decarbonizing the thermal and transportation sectors to meet the requirements of the Global Warming Solutions Act (“GWSA”), it is imperative that electricity remains cost competitive with fossil fuels like natural gas, propane, and fuel oil. Doing so will broadly support efforts to electrify how we heat and cool our buildings and power our transportation while also working to reduce overall energy burden across Vermont. As Vermonters electrify thermal and transportation needs, while their electricity bill may increase, to the extent electricity remains a less costly fuel than traditional heating and transportation fuels, their energy costs across these three areas could decrease overall. This is one reason it is particularly important to ensure programs and policies effectively target the highest energy burdened Vermonters, to help those most in need of reducing their energy-related burden.

As these transitions occur, centering the perspectives of Vermont’s most vulnerable and impacted communities is critical. Act 154 of 2022 established an environmental justice policy for Vermont, stating “It is the policy of the State of Vermont that no segment of the population of the State should, because of its racial, cultural, or economic makeup, bear a disproportionate share of environmental burdens or be denied an equitable share of environmental benefits.”²⁰ This is supported by Chapter 3 of the *2022 Comprehensive Energy Plan*, which adopted the definition of energy equity used by the Vermont Climate Council’s *Guiding Principles for a Just Transition*²¹ as aiming to “make energy accessible, affordable, cleaner, and democratically managed for all communities.” These policies call for a granular understanding of how policies and programs aimed at developing distributed renewable energy in Vermont burden specific communities and how those communities can shape and/or benefit from future development.

Ultimately, this new context is a shift from the policy landscape during which the original net-metering program was developed. At the time, Vermont did not yet have a RES and the market for deploying distributed renewable generation was still in its nascent form. Now with a RES policy that will require 100% renewable electricity to serve all Vermont ratepayers by 2035, the question at hand is how to meet RES requirements while balancing energy policy objectives outlined in statute. These include providing electric service that is least-cost, sustainable, and reliable²² while centering considerations related to environmental justice and energy equity. The latter objectives call for addressing historical inequities of access to the benefits from investing in Vermont’s energy transition, both rectifying these inequities and ensuring future programs prioritize delivering benefits to the most vulnerable Vermonters while seeking to mitigate their burdens.

¹⁹ Agency of Natural Resources (July 2024). *Vermont Greenhouse Gas Emissions Inventory and Forecast, 1990-2021*, available at https://outside.vermont.gov/agency/anr/climatecouncil/Shared%20Documents/1990-2021_GHG_Inventory_Uploads/_Vermont_Greenhouse_Gas_Emissions_Inventory_Update_1990-2021_Final.pdf?_gl=1*1xtry69*_ga*MTEwODlyOTguMTcxNzY3NzE0Mw..*_ga_V9WQH77KLW*MTczMjI5ODA5OS44OC4wLjE3MzlyOTgxMDguMC4wLjA.

²⁰ 3 V.S.A. §6003

²¹ Just Transitions Subcommittee of the Vermont Climate Council (2021) *Guiding Principles for a Just Transition*, available at [https://outside.vermont.gov/agency/anr/climatecouncil/Shared%20Documents/\(6\)%20Guiding%20Principles%20and%20Scoring%20Rubric.pdf](https://outside.vermont.gov/agency/anr/climatecouncil/Shared%20Documents/(6)%20Guiding%20Principles%20and%20Scoring%20Rubric.pdf) citing the Initiative for Energy Justice.

²² 30 V.S.A § 202a

4. Key Definitions: Program Objectives and Vermont's Frontline & Impacted Communities

Developing a targeted set of recommendations requires a clear understanding of the objectives the State is seeking to achieve and the communities for whom the recommendations are intended to benefit. This section reviews and offers a definition for each of the program objectives stated in Act 179 as well as identifying frontline & impacted communities considered through this effort. The extent to which those communities currently experience inequities with regards to the stated objectives is then briefly reviewed.

Successor Program Objectives

Act 179 tasks the Department with developing a report that includes recommendations for a replacement program for group net metering that will achieve a series of objectives, with a strong focus on supporting the affordable housing and manufactured home communities. These objectives, as defined by the Department with input from the Act 179 meeting participants,²³ are:

- **Reducing resident energy burden:** Reducing resident electricity and energy (more broadly) expenditures to the benefit of the resident, with a focus on Vermonters with low income
- **Reducing operating costs:** Reducing the overall energy and energy-related operations and maintenance costs for a building
- **Encouraging building electrification and decarbonization:** Facilitates conditions that support electrification of heating and other decarbonization measures for both electric ratepayers and building owners participating in a program and those who are not. This could include limiting costs to implement the program and related increases to electric rates, reducing building operation costs, and considering energy costs holistically. A program should be transparent about if and how the program shifts costs (i.e., increases burdens) to customers who are not participating, thereby possibly discouraging *their* building electrification.
- **Connecting communities with solar:** Creating a community asset that provides economic, social, and/or environmental benefits such as:
 - financial benefits (i.e., bill credits), an asset to leverage, lease payments (*economic*)
 - connection and empowerment related to participating in the clean energy transition and/or participating in a community solution (*social*)
 - well sited generation, including utilization of preferred sites identified under 24 V.S.A § 4352 and in consideration of natural resource considerations (*environmental*)

Act 179 also specifies that a successor program would meet the intent of the section through including 1) a process to bring solar or renewables online that could be owned by affordable housing developers, 2) a process to enroll eligible customers, and 3) a process to offer bill credits on a monthly basis to eligible customers (as appropriate).

²³ The definitions for these objectives were developed in discussion with the participants of Meeting 3. Notes from that discussion are included in **Appendix D**

When the Department reviewed the scope of this report during Meeting 1 of the working series, several partners raised that they felt that the intended scope of the report was to develop a successor program to serve only affordable housing and manufactured home communities. The Department acknowledged these comments and flags the need to support those communities in participating in and benefiting from the energy transition. However, the Department also acknowledges that these communities do not represent the full breadth of Vermonters in need of support, in particular those with low income but who have not yet attained or live in affordable housing. The Department interprets the language in Act 179 as clearly demonstrating a strong focus on affordable housing and manufactured home communities, however, the language offers the latitude to consider a broader definition of Vermont's impacted & frontline communities for whom a successor program could serve. Given this perspective, the Department takes a more expansive approach to addressing the objectives, as detailed in the next section.

Vermont's Frontline & Impacted Communities

In considering these objectives, the Department was also tasked with discussing and prioritizing recommendations based on their impact to Vermont's frontline and impacted communities.²⁴ Doing so requires clearly defining who these communities are from the beginning of a process to establish who should be centered in design of a successor program and evaluating to what extent they currently experience inequities. This helps understand how a program might seek to address those inequities. Which communities are considered "frontline and impacted" can differ based on the specific program under consideration.²⁵

Given language in Act 179, Act 154 of 2022 (Vermont's Environmental Justice Law), and in consultation with the meeting participants, for the purpose of this report, frontline & impacted communities were defined as:

- Income-eligible residents of manufactured home communities, including consideration of the variety of existing ownership models for those communities (ex. community owned, non-profit owned, for-profit developer owned)
- Affordable housing tenants & affordable housing developers and funders
- Tenants & owners of qualified rental units, with particular consideration for tenants and ensuring program benefits flow directly to them
- Vermonters with low income, including those who have not yet attained affordable housing
- Vermonters with high energy burden
- Vermont's environmental justice focus populations ("EJFP"), currently defined by 3 V.S.A § 6002(4) as a census block group in which:
 - the annual median household income is not more than 80 percent of the State median household income;

²⁴ (1) Discuss and prioritize recommendations for replacement programs based on how they would impact Vermont's impacted and frontline communities and identify opportunities for these communities to benefit from investments in renewables to adapt to climate and economic change within the framework of a replacement of the net-metering program.

²⁵ See the *Guiding Principles for a Just Transition* pg. 5 for a review of how frontline & impacted communities are defined in work of the Vermont Climate Council, including four key criteria and examples of communities which may meet them.

- Persons of Color and Indigenous Peoples comprise at least six percent or more of the population; or
- at least one percent or more of households have limited English proficiency.
- Municipalities
- Schools
- Communities with other vulnerabilities, such as elderly populations living on fixed income and/or those who identify as having a disability

As these communities are centered in the design of a successor program and related recommendations, it is important to think of how recommendations impact both program participants (i.e., those who enroll in the program) and non-participants (i.e., those who do not enroll in a program). This is critical to ensure that a program designed to deliver benefits to one community does not inadvertently shift burdens associated to either members of that community who do not participate and/or other priority communities. For example, as noted by some meeting participants, it is important to remember that whenever a program uses income-qualification (particularly a binary one), there is always a customer just over the threshold who cannot participate but who, for example, may still struggle with high energy burden. Similarly, if there is a focus on affordable housing, it is important to remember community members with low income who may not have attained affordable housing yet.

Current Inequities Around Energy Burden, Decarbonization, & Connecting Communities with Solar

Energy Burden

Energy burden represents the percentage of a person’s income that they spend on energy-related expenditures.²⁶ As outlined in the *2023 Efficiency Vermont Energy Burden Report*, considering thermal, transportation, and electricity related energy costs the average energy burden in Vermont is 11%.²⁷ Excluding transportation,²⁸ average electric and thermal energy burden in Vermont is roughly 5%, ranging from 2% to 11%. There is no specific definition of what is considered an affordable energy burden, but studies estimate it to be approximately 4-10% when considering thermal and electric sectors, with 6% a common threshold.²⁹ Roughly 37% of the towns in Vermont have a combined electricity and thermal energy burden above 6%. Geographically, higher energy burdened towns are located in rural areas of the state and in areas with lower median income, including the Northeast Kingdom and pockets of southern Vermont. Energy burden tends to be lowest in Chittenden County and the greater Champlain Valley region, in part due to the availability

²⁶ Justine Sears and Kelly Lucci, EFFICIENCY VERMONT, *2023 Vermont Energy Burden Report* (Aug. 2023), available at <https://www.encyvermont.com/Media/Default/docs/landing-pages/energy-burden-report/2023-EfficiencyVermont-EnergyBurdenReport.pdf>.

²⁷ Ibid.

²⁸ Ibid.

²⁹ Empower Dataworks (2020). *White Paper – Quantitative Energy Equity: How utilities can create cost-effective, adaptive and targeted energy equity programs*. Available at <https://pubs.naruc.org/pub/F7E7EDC7-155D-0A36-31CA-49A77302407D>

of higher income and access to natural gas.³⁰ More populous areas of the state with pockets of high energy burden communities include Rutland City, Barre, and Winooski.

Although we don't have data specifically examining the relationship of energy burden to other demographic indicators, such as race, age, and housing type and tenure, recent data from the *Vermont Housing Needs Assessment: 2025-2029* ("VT HNA")³¹ shows a correlation of income with many of those indicators. For example:

- Excluding those Vermonters who identify as two or more races, people of color in Vermont tend to have lower income than their white counterparts. In 2022, the median income of Black or African American Vermonters was 70% of the median income for white Vermonters (\$52,736 v. \$74,499).³²
- There are roughly 76,262 occupied renter households in Vermont in 2022, 74% of which are multi-family units (compared to 5% of owner-occupied building stock). In 2022, only 26% of renter households had incomes greater than Vermont's area median income (\$74,014), compared to 58% of households who own their home.³³ Renter median income was \$43,102, 47% of the homeowner median income of \$90,311.
- Roughly five percent of Vermont's households (19% of the rental households, about 14,670 apartments connected to 541 developments) consist of designated affordable housing. These housing units often serve Vermonters with some of the lowest incomes statewide, with roughly 50% of subsidized affordable housing residents earning less than \$17,000 annually.³⁴ Income-eligible customers in master-metered multifamily buildings are not currently able to participate in some utility programs (such as Energy Assistance Programs, discussed in [Section Five](#)) which offer bill discounts.
- The report from the Mobile Home Task Force³⁵ issued in 2024 also suggests that residents of mobile home and manufactured home communities disproportionately skews towards low and moderate income.

This suggests these communities may also face higher energy burdens, given the correlation between energy burden and income, some of whom may face barriers to accessing current programs aimed at reducing those burdens.

Advancing Building Decarbonization and Electrification and Operating Costs

³⁰Justine Sears and Kelly Lucci, EFFICIENCY VERMONT, *2023 Vermont Energy Burden Report* (Aug. 2023), available at <https://www.encyvermont.com/Media/Default/docs/landing-pages/energy-burden-report/2023-EfficiencyVermont-EnergyBurdenReport.pdf>.

³¹ Vermont Housing Finance Authority (June 2024) *Vermont Housing Needs Assessment: 2025-2029*, available at <https://accd.vermont.gov/housing/plans-data-rules/needs-assessment>

³² Ibid.

³³ Ibid.

³⁴ Written comments submitted by Mia Watson from Vermont Housing Finance Authority via email to the Department of Public Service on October 17, 2024.

³⁵ *Report of the Mobile Home Task Force*, Feb. 2024. Available at <https://legislature.vermont.gov/Documents/2024/WorkGroups/Senate%20Economic%20Development/Housing%20and%20Community%20Development/BE%20Home%20Bill/W~Curt%20Taylor~Mobile%20Home%20Task%20Force%20Report~1-31-2024.pdf>

As noted in both the 2019³⁶ and 2023³⁷ Vermont Energy Burden Reports, data consistently show that the adoption of clean energy technologies in Vermont has generally skewed towards those communities with lower energy burden.³⁸ The 2023 Vermont Energy Burden Report highlights that the 10 towns with the highest per capita adoption of cold climate heat pumps are estimated to have low to moderate thermal energy burden. **Figure 2**, from the 2023 Vermont Energy Burden Report, highlights geographic disparities between the towns with the highest per capita heat pump adoption and those with the highest thermal burden. Shows much higher adoption CCHP in areas with low to moderate thermal energy burden.

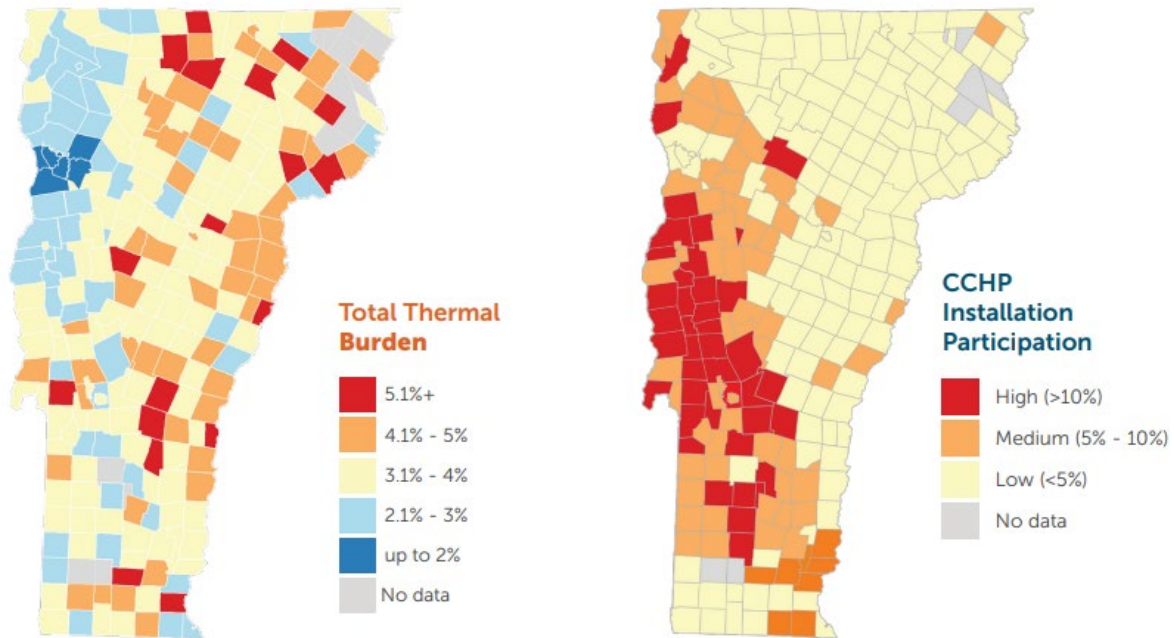


Figure 2. Thermal energy burden by town (left) and per capita installations of cold climate heat pumps by town (2017-2021). Source: 2023 Vermont Energy Burden Report³⁹

While many utilities now offer added incentives for income-eligible customers to adopt clean energy technologies (as further discussed in [Section Five](#)), analysis by Efficiency Vermont (“EVT”) illustrated that, to date, that such incentives offered by EVT may not be reaching customers most in need of support. As shown in **Figure 3**, in the Northeast Kingdom, where median town income is lower and energy burden tends to be high, participation in bonus incentives targeting low- and moderate- income customers has been limited, with the highest participation in Rutland and Addison counties.

³⁶ Justine Sears and Kelly Lucci, EFFICIENCY VERMONT, 2019 Vermont Energy Burden Report (Oct. 2019), available at <https://www.encyvermont.com/Media/Default/docs/white-papers/2019%20Vermont%20Energy%20Burden%20Report.pdf>.

³⁷ Justine Sears and Kelly Lucci, EFFICIENCY VERMONT, 2023 Vermont Energy Burden Report (Aug. 2023), available at <https://www.encyvermont.com/Media/Default/docs/landing-pages/energy-burden-report/2023-EfficiencyVermont-EnergyBurdenReport.pdf>.

³⁹ Ibid.

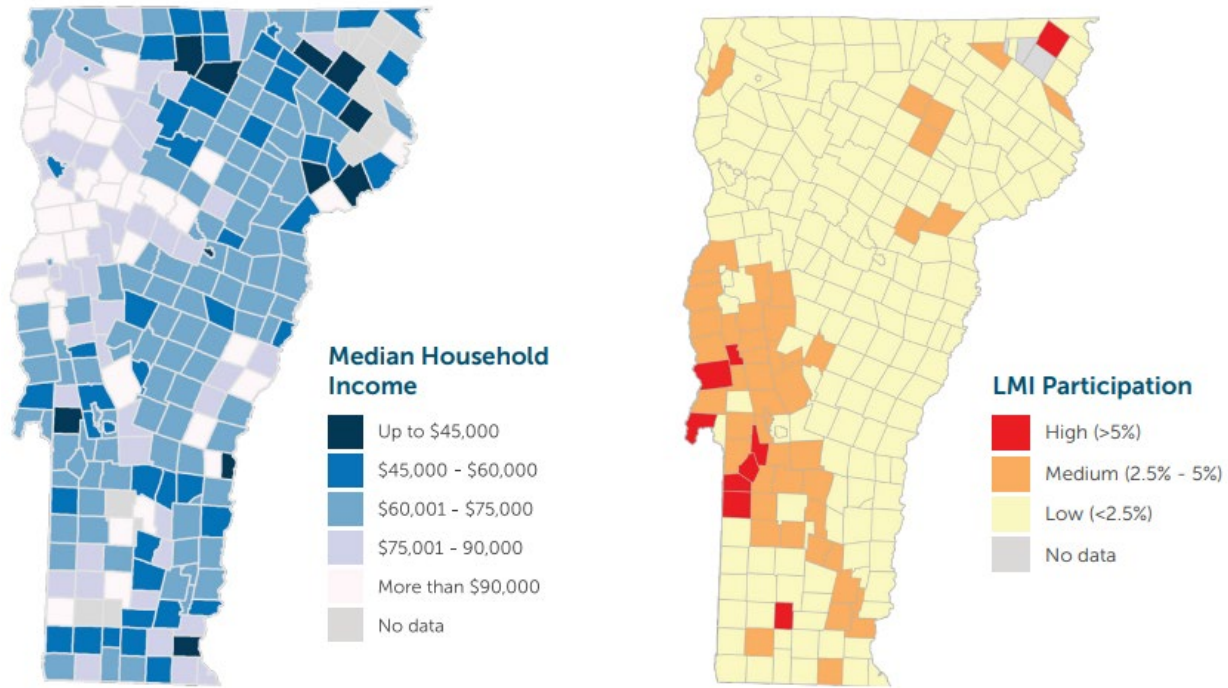


Figure 3. Town-level median income (left) and per-household participation in Efficiency Vermont low- and moderate-income bonuses (right). *Source: 2023 Vermont Energy Burden Report*⁴⁰

Discussions during the meeting series convened by the Department also highlighted challenges faced by rental and multifamily properties in decarbonizing buildings. Split incentives between landlords or building developers and tenants can prevent or create barriers to adoption of energy and cost saving infrastructure. For example, if a tenant pays the energy bill, the building operator does not necessarily have an incentive to upgrade the heating equipment to be more efficient or use a lower-emission fuel. Similarly, tenants may not have direct control to make those investments themselves. For affordable housing developers such as Evernorth, electrification of building thermal systems (particularly in natural gas territory) can lead to increased costs related to both upfront investment in electrification technologies and their operation and maintenance over the life of the building. These increased costs can present challenges to electrify given the requirements to offer affordable rents based on tenant income.

Connecting Communities with Solar

Nationally, recent research by Lawrence Berkeley National Labs⁴¹ concluded that the adoption of rooftop, net-metered solar has been inequitable when considering income, housing type and tenure, and race. In Vermont, recent analysis supports this finding, showing inequitable adoption trends for residential scale (up to 15 kW) distributed solar by income and energy burden.

⁴⁰ Ibid.

⁴¹ O’Shaughnessy, E., Barbose, G., Kannan, S., and Summer, J. (June 2024) Presentation: *Evaluating community solar as a measure to expand equitable clean energy access*. Available at https://emp.lbl.gov/sites/default/files/2024-06/comm_solar_access_6_18.pdf

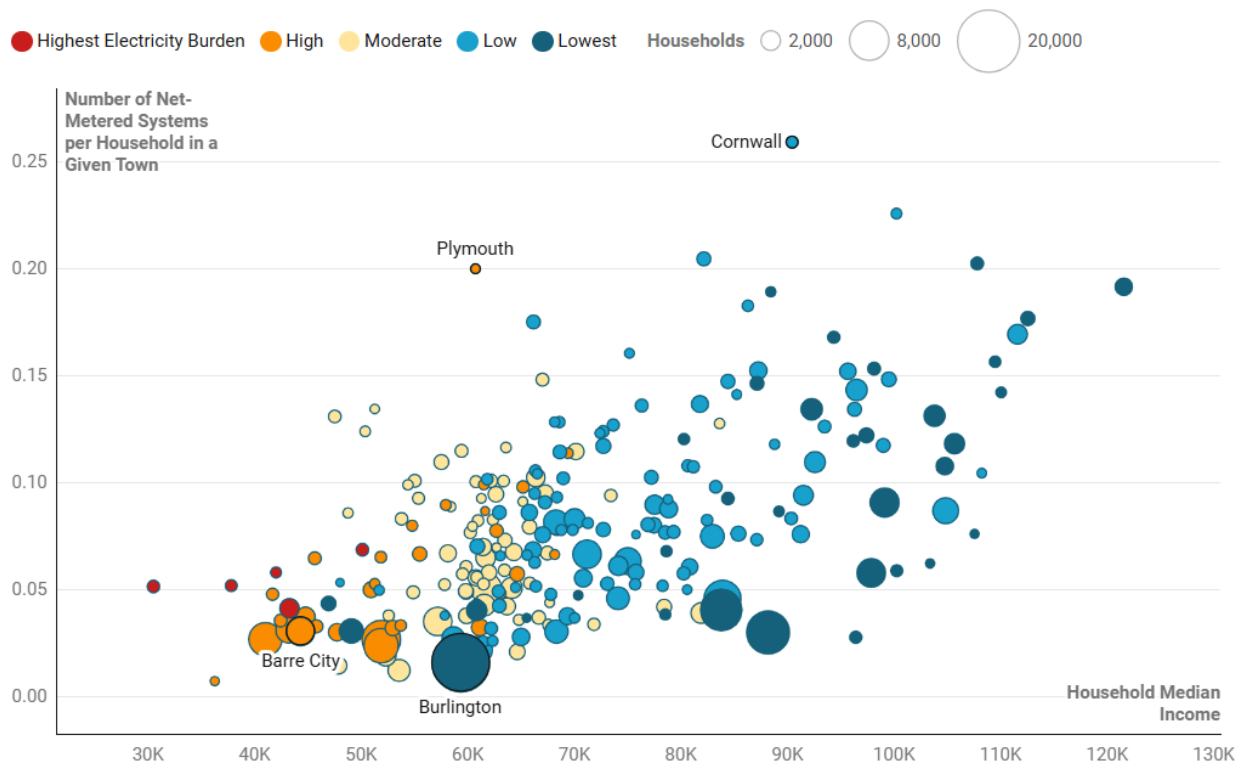


Figure 4. Number of net-metered solar installations less than 15kW per household in a town by household median income (x-axis), and town electricity burden (color of circle). Levels of electricity burden determined by 2023 Vermont Energy Burden Report. Size of circle determined by number of households in a town. Source: Department of Public Service⁴²

As illustrated in **Figure 4**, in Vermont, a household in a town with a higher median household income is more likely to have installed solar than a household in a town with lower median income. Given the correlation between income and electricity burden, this also indicates towns most burdened by electricity spending often have the lowest adoption of solar to date. This currently holds true in all regions of the State. Aligned with these findings, public opinion polling conducted by MassInc Polling Group on behalf of the Department in 2023 found that Vermonters with income less than \$50,000 were less likely to have solar panels on their property or participate in community solar than individuals with income above that threshold.⁴³

Recent assessments from the VT HNA, the University of Vermont, and the Department also suggest demographic factors such as race and ethnicity and housing tenure may influence access to investing in solar in Vermont. For example, a study conducted by the University of Vermont found that non-white Vermonters were seven times less likely to report owning solar than white

⁴² Analysis conducted by the Department of Public Service using data from the 2023 Vermont Energy Burden Report and Distributed Generation Survey data submitted by the distribution utilities to ISO New England. Distributed Generation data through March 2024.

⁴³ The MassInc Polling Group on behalf of the Vermont Department of Public Service (October 2023). *Vermont Weighs In: Public Opinion on Renewable Electricity*. Available at <https://publicservice.vermont.gov/sites/dps/files/documents/VT%20Weighs%20In%20Report%20MPG%20for%20Vermont%20PSD%2010.3.23.pdf>

Vermonters and, similarly, renters were three times less likely than homeowners.⁴⁴ This is potentially due to intersecting inequities since data from the VT HNA show that, Black or African American Vermonters are less likely to own a home compared to white Vermonters (28% versus 74% respectively, a greater discrepancy than the national average). Similar but less drastic differences are experienced by American Indian and Alaska Native, Asian, multiracial, and Hispanic communities as well.⁴⁵ Data from the Department’s public opinion polling also indicate that individuals who own their home are more likely to have solar panels on their property (19%) and participate in community solar or group net-metering (8%) compared to individuals who rent (5% and 3%, respectively).⁴⁶

*Note on Affordable Housing & Manufactured Homes Specifically*⁴⁷

Based on the Department’s information request to affordable housing developers (described in [Section Two](#)), the extent to which developers have been able to pair housing projects with solar has varied. Between 2013 and 2023, roughly 33% of the 76⁴⁸ projects reported to the Department were connected with solar. Evernorth also reported they have two offsite solar arrays which collectively provide discounted electricity to 390 units. In the past 2 years, based on data provided by housing developers, affordable housing projects have almost exclusively been connected with rooftop net-metered solar, with the exception of one project currently under construction by Evernorth that will be served by both on-site, rooftop and off-site, group net-metered arrays, covering roughly 50% of the building’s annual electricity consumption. Costs to develop these projects, which are almost exclusively rooftop arrays, average roughly \$3000 per unit or \$2.59 per Watt, similar in cost to a single-family rooftop array.

In response to the Department’s information request, affordable housing developers highlighted several barriers they have faced in connecting housing developments with solar, including:

- **Costs**, including the necessary upfront capital investment, limited solar-specific funding, and complexity of navigating possible funding (ex. Inflation Reduction Act tax credits)
- **Distribution system constraints**, such as the “red” areas of Green Mountain Power’s Solar Map⁴⁹, which can limit the size of solar development
- **On site space constraints**, such as needing to accommodate space on a building rooftop for HVAC equipment (including heat pump compressors), therefore limiting the space for

⁴⁴ Keady, W., Panikkar, B, Nelson, I.L., & Zia, A. (2021). Energy justice gaps in renewable energy transition policy initiatives in Vermont. *Energy Policy*, 159. DOI: 10.1016/j.enpol.2021.112608

⁴⁵ Vermont Housing Finance Authority (June 2024) *Vermont Housing Needs Assessment: 2025-2029*, available at <https://accd.vermont.gov/housing/plans-data-rules/needs-assessment>

⁴⁶ The MassInc Polling Group on behalf of the Vermont Department of Public Service (October 2023). *Vermont Weighs In: Public Opinion on Renewable Electricity*. Available at <https://publicservice.vermont.gov/sites/dps/files/documents/VT%20Weighs%20In%20Report%20MPG%20for%20Vermont%20PSD%2010.3.23.pdf>

⁴⁷ (3) *Discuss progress affordable housing funders and developers have made to date in connecting projects with solar resources, as well as any barriers to this, and the comparison of the availability and cost of net metered installations on single-family dwelling units.*

⁴⁸ This represents roughly 14% of the affordable housing projects developed to date in Vermont.

⁴⁹ Green Mountain Power Solar Map 2.0 is available at <https://gmp.maps.arcgis.com/apps/webappviewer/index.html?id=4eaec2b58c4c4820b24c408a95ee8956>

rooftop arrays, or facing land constraints within manufactured and mobile home communities as well as those developments focused on building in downtowns and village centers with limited parcel size or where the existence of water and sewer infrastructure necessitates prioritizing use of land for housing

The Department heard from a couple housing developers who have net-metering credit purchase agreements with solar developers which have helped cover between 10-15% of a housing development's electricity bill, but they reported that third-party owned arrays provide less financial benefit than arrays owned directly by housing developers.

Addressing Inequitable Access to the Benefits of Investing in Solar

Community solar, defined by the Department of Energy ("DOE") as any "solar project or purchasing program, within a geographic area, in which the benefits of a solar project flow to multiple customers"⁵⁰ has been identified as one possible way to address these inequities. The recent study by Lawrence Berkeley National Laboratory ("LBNL") suggests that "Relative to rooftop solar adopters, community solar adopters are about 6 times more likely to live in multifamily housing, 4 times more likely to rent, and earn 20% less income."⁵¹ In Vermont, virtual group net-metering has been one pathway to develop community solar projects, although several other pathways exist, such as Vermont Electric Cooperative's ("VEC") [Community Solar Program](#) and the new Affordable Community Renewable Energy ("ACRE") Pilot Program⁵² (see [Section Six](#) for more information on utility programs, including ACRE). Initial data in **Figure 5** provided by VEC shows the lowest levels of net-metering participation and highest levels of ACRE participation the VEC's most energy burdened VEC districts – districts 1,2,3 in the map show in **Figure 6** – which collectively include 60% of ACRE participants.

⁵⁰ These customers could include individuals, businesses, nonprofits, and other groups. Department of Energy, <https://www.energy.gov/communitysolar/community-solar>

⁵¹ O'Shaughnessy, E., Barbose, G., Kannan, S., and Summer, J. (June 2024) Presentation: *Evaluating community solar as a measure to expand equitable clean energy access*. Available at https://emp.lbl.gov/sites/default/files/2024-06/comm_solar_access_6_18.pdf

⁵² This program has income eligibility requirements set at customers at or below 185% of the Federal Poverty Level.

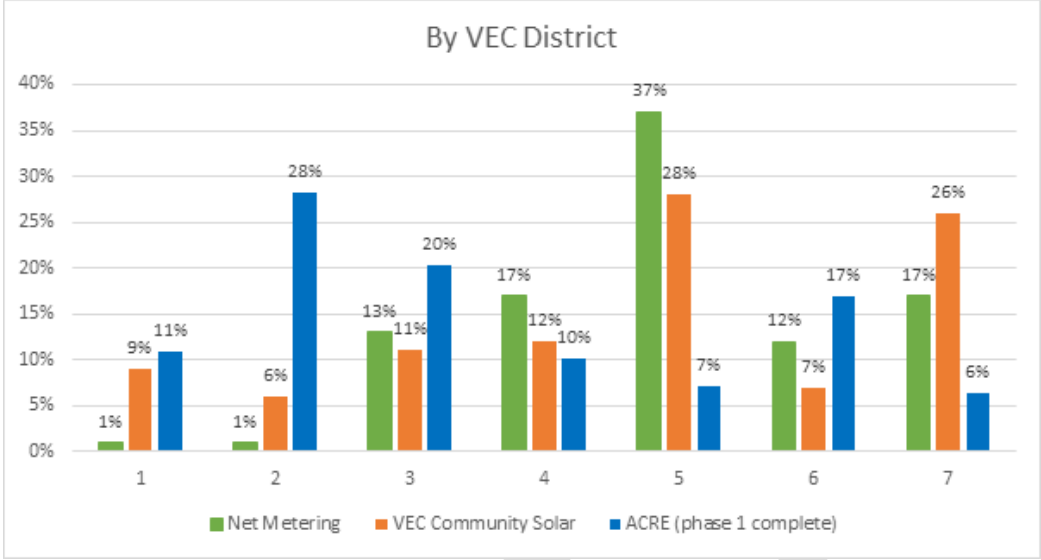


Figure 5. Percent of VEC Customers Participating in Net-Metering (green), VEC Community Solar (orange), and ACRE (blue) Programs by VEC District. *Source: VEC*

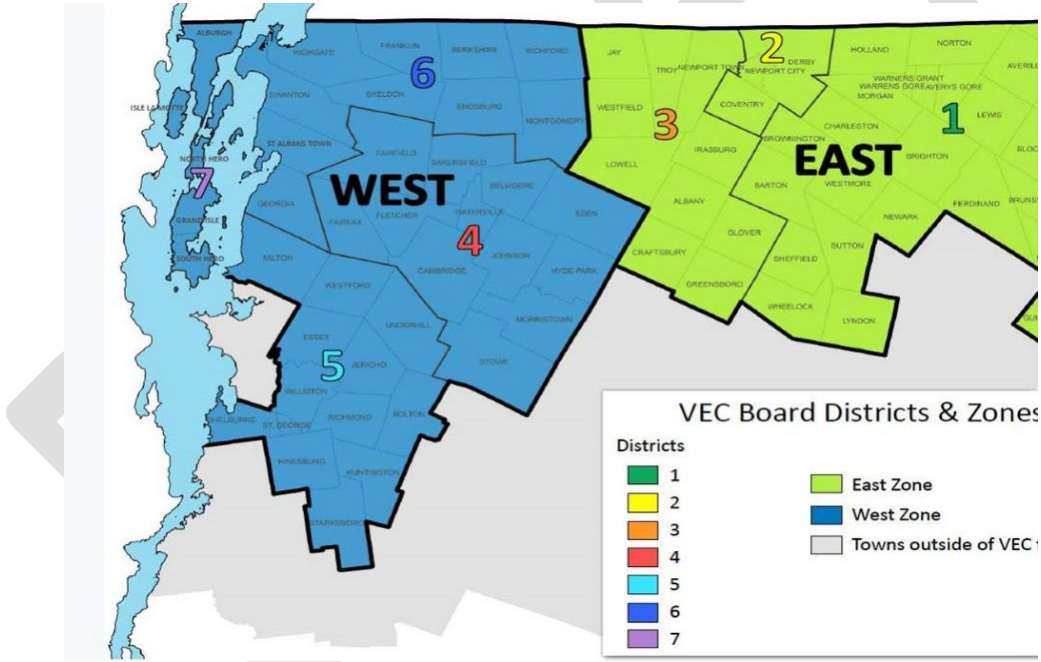


Figure 6. VEC Board Zones and Districts. *Source: VEC*

Within the context of the current group net-metering program, SEVCA’s [community solar program](#), established in 2018, offers 50 income-eligible participants bill credits of roughly \$400/year. According to SEVCA, this assistance has led to a reduction in the percentage of participants requesting other financial assistance for their electric bills. Prior to enrollment, 60% of participants required assistance to prevent electric service disconnection, reduced to 30% post enrolled.

5. Existing Utility Programs

The electric distribution utilities currently run numerous programs to support income-eligible customers. This section describes those programs, as reported by the utilities in response to the Department's information request, grouped by programs that offer bill assistance and incentives for electrification and decarbonization.⁵³

Bill Assistance (i.e bill credit, reduced rate)

Energy Assistance Program

Offered by: Green Mountain Power, Burlington Electric Department)

Objective(s) Advanced: Reduce Energy Burden

Description: Green Mountain Power ("GMP") & Burlington Electric Department ("BED") currently offer Energy Assistance Programs ("EAP") to their customers with income at or below 185% of the Federal Poverty Level ("FPL"). These programs offer customers a discount on their monthly bill.

- **GMP:** Since 2009, GMP has offered a discounted rate (customer charge and kWh) which amounts to roughly 25% of a customer's bill plus a one-time clearing of past due bills upon enrollment. As of September 2024, 7180 customers participate in the program, although participation has varied over time, at times exceeding participation of over 10,600 customers. Costs of the program are recovered on all GMP customer bills via a non-bypassable EAP fee with different rates for residential (\$1.50), commercial (\$3.00), and industrial (\$75.00)
- **BED:** Starting in 2021, BED began offering income-eligible customers a 12.5% discount on their energy and customer bill charge. As of September 2024, 797 customers participate in the program, up from 50 in the first program year. This increased from 234 participants in 2023, after BED began auto enrolling customers in 2024 based on their participation in the Bonus Fuel Assistance program. The program has been funded through American Rescue Plan Act ("ARPA") funding initially. Once those funds have been expended, the program will be funded through ratepayer cashflow.

PUC Case No. 20-0203-INV investigated whether low-income rates should be established at all Vermont utilities. The case did not ultimately result in the establishment of such rates, highlighting progress utilities were making in offering programs to support customers with low income, although in the Order closing the case the PUC stated it "may open an investigation into this topic again in the future if the utilities fail to develop permanent programs that provide meaningful assistance to their low-income customers."⁵⁴ Data collected during that proceeding estimated that between 20-

⁵³ (2) Discuss current programs electric utilities have in place to serve income-eligible customers, the number of participants in those programs, and their trends over time.

⁵⁴ Order issued 6/13/2023 in Case No. 20-0203-INV, *Investigation into the establishment of reduced rates for low-income residential ratepayers of Vermont electric utilities.*

40% of a given utility’s residential customers could be eligible for assistance through such a program based on eligibility set at 185% of the federal poverty level⁵⁵.

One challenge of EAP programs that has been identified is their current ability to support to all Vermonters in need. Current frameworks struggle to provide benefit to master-metered multi-family buildings, for example.

Affordable Community Renewable Energy (“ACRE”) Pilot Programs

Offered by: GMP, Vermont Electric Cooperative (“VEC”) and Washington Electric Cooperative (“WEC”), Vermont Public Power Supply Authority (“VPPSA”), Stowe Electric Department (“SED”)

Objective(s) Advanced: Reduce Energy Burden, Connect Communities with Solar (reduction associated with specific solar array procured by the utility)

Description: In 2022, the Department of Public Service allocated \$10 million of ARPA funding to support low-income, community solar pilot programs. Through a competitive Request for Proposals to the utilities, four projects were identified to serve eligible customers with incomes 185% or below the Federal Poverty Level (“FPL”). Program structures vary by utility with some offering a discounted per kWh rate and others offering a fixed bill credit, each resulting in a \$18-45/month benefit for participating customers for the next 5-10 years. Programs are in the beginning phases of implementation, with some not yet actively enrolling participants. Vermont Electric Cooperative launched Phase 1 of their ACRE program in early 2024 and has subscribed 334 customers.

Other Income-Eligible Solar Programs

Offered by: GMP

Objective(s) Advanced: Reduce Energy Burden, Connect Communities with Solar

Description: In addition to their ACRE pilot, GMP has run several additional efforts seeking to support income-eligible residents (i.e. Sun Match, Solar EAP, Shared Solar tariff). These projects have been funded through a variety of sources, including qualified low-income economic projects under 26 U.S.C. §48(e)(2)(C) (Shared Solar), the Clean Energy Development Fund (Solar EAP Tariff), and GMP’s own information technology budget (Sun Match).

Incentives for Electrification & Building Decarbonization

GMP, BED, VEC, WEC, VPPSA, and SED each run programs to provide enhanced incentives to income eligible customers to directly support the adoption of building decarbonization and electrification. Structures differ by utility, but generally these programs offer partial or full

⁵⁵ Data filed by Green Mountain Power in Case No. 20-0203-INV on June 10, 2022 and used by the Commission in model filed on October 4, 2022 “Attachment to Request for Comment on Model.”

incentives to support the adoption of new technologies. Prescriptive incentives including funding for:

- **Cold Climate Heat Pumps:** Depending on the utility and specific technology, income-eligible customers could receive anywhere from \$1600 to \$7850 in incentives. Some utilities (ex. VEC, GMP) also offer free installation.
- **Electric Vehicles:** Numerous utilities offer enhanced incentives for income-eligible customers to support all electric and plug-in hybrid vehicles. For example, GMP and VEC offer \$1000 and \$600, respectively, above the base incentive. BED similarly offers a variety of enhanced incentives ranging from \$1500-\$3000 in total, in addition to incentives targeting expansion of semi-public and public charging in disadvantaged communities and seeking to support “super users.”
- **Other:** Other incentives target technology adoption and upgrades related to:
 - Storage (for example, VPPSA’s Energy Storage Access program will cover the cost and installation of a battery if they have incomes at or below 80% of state median income,
 - Electric panels (for example, GMP’s Home Energy System Upgrades will cover 90-100% of the project cost for customers with income 80-100% of AMI),
 - Other electrification technologies (ex. electric bikes, lawn equipment, zero energy modular homes, heat pump controls) and,
 - Custom programs that can target specific projects, such as electrification of affordable housing heating systems.

Many of these programs are a part of the Renewable Energy Standard Tier III program which seeks to reduce the use of fossil fuels. Other funding sources include Energy Efficiency Utility and Act 44⁵⁶ funds, ARPA, Clean Energy Development Fund, and Vermont Low Income Trust for Electricity (“VLITE”). Participation in the programs varies by utility and incentive, ranging from a handful of customers or projects upwards of several hundred customers per year.

⁵⁶ Act 44 of 2023, *An Act Relating to energy efficiency modernization*, available at: <https://legislature.vermont.gov/Documents/2024/Docs/ACTS/ACT044/ACT044%20As%20Enacted.pdf>

6. Funding Opportunities

A variety of funding opportunities, including the unrepresented federal funding opportunities that have unfolded in recent years, seek to support connecting communities with solar and other energy-related projects.⁵⁷ This section reviews these opportunities.

One-time Federal Funding

American Rescue Plan Act (“ARPA”)

Affordable Community Renewable Energy (“ACRE”) Program 1.0

As discussed in [Section Five](#), in fiscal year 2022, the Department allocated \$10 million of ARPA funding to support the ACRE pilot program, which aimed to:

- Improve access to clean distributed energy for all Vermonters, especially those left out of the energy transition
- Reducing energy burden of the most vulnerable Vermonters
- Avoid any cost-shift and cross-subsidization
- Explore different approaches to community solar outside the net-metering framework.

The four pilot programs being administered by the distribution utilities are beginning to enroll participants in 2024.

Other Funding Efforts

In addition to ACRE, with the support of partners, the Department is working to deploy an additional \$72 million in funding to support households with low- and moderate-income with the following allocations:

- \$30 million for moderate income weatherization
- \$10 million for flood recovery
- \$20 million for electric panel upgrades
- \$5 million for heat pump water heater installations
- \$7 million for battery storage and load management

Inflation Reduction Act (“IRA”)

Environmental Protection Agency (“EPA”) Greenhouse Gas Reduction Fund (“GGRF”) Solar for All

In July 2024, the Department was awarded just over \$62 Million in EPA GGRF Solar for All funding. The Department has allocated this funding among three programs, which are expected to begin implementation by the end of 2025:

- **RAISE** (Residential Assistance in Solar Energy): ~\$15 million will support installation of small (<5kW) arrays on single family homes

⁵⁷ (4) List funding sources available (or coming available) for solar and other energy-related projects benefiting affordable housing and customers with low-income, including if it is federal or time-limited.

- **MASH** (Managed Affordable Solar Housing): ~\$24 million will specifically support affordable housing developers and manufactured home communities with both on- and off-site solar development
- **ACRE 2.0**: ~\$21 million will go towards an extension of the ARPA ACRE 1.0 pilot program, targeting renters with low income and Vermonters with low income broadly, who cannot (or do not want to) install solar on their home or property.

Customers with income under 80% area median income (“AMI”) or 200% of the Federal Poverty Level (“FPL”), living in low income and disadvantaged (“LIDAC”)-designated communities identified by the EPA’s Climate and Economic Justice Screening Tool, and/or those living in managed affordable housing (MASH program) will be eligible to participate in the Solar for All funding programs. Programs are intended to deliver 20% savings on the average residential electric bill.

Home Electrification and Appliance Rebates (“HEAR”) Program

The Department expects to receive over \$29 million to support point of sale rebates for households earning less than 150% AMI (up to 100% of cost for less than 80% AMI, up to 50% of cost for households with income within 80-150% AMI). The program has an incentive maximum of \$14,000 per household to support adoption of heat pumps, heat pump hot water heaters, and electric service upgrades and wiring, among other technologies. The Department has proposed to distribute the funding among three programs:

- Roughly \$9 million to moderate income heat pump rebates (80-120% AMI)
- \$10 million delivered in partnership with EEU and affordable housing developers to support heating electrification in new multifamily affordable housing
- \$10 million delivered through the Office of Economic Opportunity (“OEO”) Weatherization Assistance Program (“WAP”) to support low -income electrification (i.e., heat pumps, heat pump water heaters, electric panel service upgrades)

Home Efficiency Rebates (“HOMES”)

The Department expects to receive just over \$29 million to support tiered incentives based on income level and energy savings which are eligible to support measures including weatherization, air-sealing insulation, ventilation, and heat pumps. The Department has proposed to use this funding the support the OEO WAP through 2031.

Investment Tax Credit

In addition, the IRA extended the Investment Tax Credit (“ITC”) out to 2032, keeping the existing 30% tax credit for an additional ten years and phasing out in subsequent years. In addition to extending the program’s duration it also added provisions to make the ITC more accessible including the “Elective Pay” provisions, which allows non-profit organizations, municipalities and states to file for and receive the credits, which was not previously possible. Additionally, the IRA created bonuses for the ITC (“BITC”) for solar installations that are sited in disadvantaged communities and for projects that directly benefit those with low-income or who are defined as disadvantaged. These bonuses can increase the 30% ITC up to 40 or 50%, however an application/selection process is required to receive these bonuses.

Ongoing Funding Sources

In addition to the utility programs described in [Section Five](#), there are numerous ongoing funding sources including:

- [OEO WAP](#), which offers free weatherization services to households that meet a variety of criteria including income eligibility.
- [Weatherization Repayment Assistance Program](#) (“WRAP”), which offers on-bill financing opportunities (i.e. a low-interest monthly charge applied to a utility bill) targeted to support households with income of 80-120% AMI to pursue weatherization projects.
- **Energy Efficiency Utility (“EEU”) Programs** through Efficiency Vermont, Burlington Electric Department, and VGS, which offer a variety of incentives to support efficiency, conservation, and electrification.

DRAFT

7. Recommendations

Throughout the meeting series convened by the Department, participants representing a variety of perspectives voiced interest in seeing continued pathways to support community-benefiting solar (and other renewable energy) programs in addition to programs that support Vermont's most impacted and frontline communities more broadly. Data gathered by the Department on existing program and funding opportunities as well as the program models reviewed during the meeting series that currently exist to connect communities to solar (summary in **Appendix C**) show that there are a variety of pathways to achieve these objectives. Each pathway involves trade-offs with regarding their ability to advance the objectives outlined in Act 179.

In the series, conversations pointed towards four overarching principles for a group net-metering successor program:

- **Transparency**, around costs (burdens) and benefits of a program, particularly demonstrating a clear understanding of who benefits and who pays, how and over what timeframe. Within a potential successor program, participants highlighted a desired for transparency around project eligibility, selection criteria, compensation calculations and how various issues are valued (i.e. energy, grid impact, environmental and land use issues, social impacts).
- **Simplicity**, from perspectives of the program administrator and potential participants. The utilities voiced a desire to build off existing programs versus adding new requirements. Several perspectives highlighted that ideally, as many of the program dollars as possible would go towards providing customer benefit (e.g. bill assistance).
- **Flexibility**, so that the program can accommodate solutions that support different building types, project ownership structures, interoperability with current programs and funding support, and pathways for communities to participate in and benefit from the design and development.
- **Minimize Costs**, to help keep electric rates affordable and ensure that a successor program does not shift costs and unduly burden customers who cannot or do not participate. This aligns with consistent concerns raised by Vermonters through a variety of public engagement opportunities, highlighting concerns about affordability.⁵⁸

One of the biggest challenges that emerged from discussions was the ability to identify a sustainable funding source to support a successor program that does not shift costs and thereby burden non-participating customers. While group net-metering has provided a pathway

⁵⁸ In the public opinion polling conducted by MassInc Polling group on behalf of the Department, 82% of surveyed Vermonters noted affordability was "Very Important" when considering where electricity comes from, and the highest number of those surveyed (29%) indicated it was the single most important factor, more than emissions reductions and reliability. These findings are consistent with results of VEC's annual member survey which noted in 2024 that "Having low cost energy continues to be more important to VEC members than receiving energy from renewable energy or carbon free energy".

to develop projects, the incentives from above market valuation of renewable generation offer benefit to certain communities while broadly creating upward rate pressure for everyone. This regressively burdens the most vulnerable Vermonters. The ACRE pilot programs provide benefit to income-eligible Vermonters without such a cost shift, but the program is 100% subsidized by federal funding (initially ARPA, then Solar for All through 2029). While federally funded programs are currently expansive, they are time limited so do not offer a sustainable model.

Throughout the conversations with partners, one outstanding question has been whether electric ratepayer dollars should be used to offset costs and/or support building electrification. If so, should those ratepayer dollars be collected via a program that is directed toward supporting community solar if other program avenues that do not shift costs could be explored to achieve decarbonization and electrification objectives? Discussions during the meeting series have illustrated that one, if not the, primary reason some partners want to see a GNM successor program is related to the ability for incentives for solar to support the costs of electrification.

Given these considerations, among others distilled during the meeting series and through the information gathered, the Department makes a suite of three recommendations which collectively address the objectives outlined in Act 179. These recommendations should be considered as a package.

1. **Establish the *Renewable Energy for Communities* program.** The legislature should direct the Public Utility Commission to initiate by rule or order a “Renewable Energy for Communities” program to support development of renewable, distributed generation that seeks to benefit communities who have historically faced barriers to accessing the benefits of investing in renewable energy.
2. **Reform compensation in the net-metering program and implement other renewable energy policy cost containment mechanisms.** The Renewable Energy for Communities program will likely not be free – directing the benefits associated with developing solar to a particular community could come at a cost greater than what renewable energy could otherwise be procured for. Thus, cost containment mechanisms are necessary to mitigate any possible increases in rates associated with the program. The Public Utility Commission should open a proceeding to reform compensation in the net-metering program to appropriately reflect the value the benefits that generation provides to ratepayers. If net-metering compensation reflects the value of that generation, cost-shifts associated with projects developed under a mechanism like virtual group net-metering would be minimized.
3. **Alternative programs should be considered to broadly support the financial barriers to advancing decarbonization and electrification of buildings.** The best way for a group net-metering successor program to help achieve this objective is through limiting upward pressure on electric rates associated with utility purchases of renewable energy.

These recommendations are discussed in more detail in the following pages.

Recommendation 1: Establish the Renewable Energy for Communities (“RE4C”) program.

The legislature should direct the Public Utility Commission (“PUC”) to establish a “Renewable Energy for Communities” program to guide and support development of renewable, distributed generation that seeks to benefit communities who have historically faced barriers to accessing the benefits of investing in renewable energy, while also helping utilities cost-effectively meet their distributed generation requirements under the Renewable Energy Standard.

The Department recommends that the PUC be enabled via legislation to establish a “Renewable Energy for Communities” program. This program, which would be developed through a proceeding culminating in an Order or Orders, would direct the distribution utilities to conduct regular procurements for new, distributed renewable energy generation meeting requirements of Tier II (as described in 30 V.S.A § 8002(a)(2)) of the Renewable Energy Standard. These procurements, conducted through Requests for Proposals (“RFPs”), should be evaluated against a set of criteria established by the PUC based on input received during the proceeding, in particular from impacted partners. Requirements in the program should be a percentage of a utility’s Tier II requirement, as determined by the PUC, with procurements occurring on a regular timescale determined during the proceeding. The program would in that way resemble the Standard Offer program, modernized to reflect the lessons learned with the Standard Offer program and considering the the goals of Act 154 of 2022 (Vermont’s Environmental Justice Law).

The program should seek to develop “community -benefiting renewable energy”⁵⁹ that seeks to achieve the following objectives:

- Create opportunities to connect communities with least-cost renewable energy projects, including in their design and governance, with a focus on those who have historically faced barriers to accessing benefits associated with investing in renewable energy, including (but not limited to):
 - Affordable housing & manufactured home communities
 - Renters
 - Vermonters with low income, living with a disability, and/or the elderly
 - Environmental Justice Focus Populations
 - Schools and municipalities, particularly those serving frontline & impacted communities

and/or

- Deliver benefits, as identified by communities and other partners, to those communities⁶⁰
- Deliver Tier II-eligible energy at the lowest possible cost in light of the benefits listed above.

Utility RFP Evaluation Criteria: Evaluation criteria to be used by utilities in selecting projects should be established by the PUC based on input received during the proceeding to develop the program.

⁵⁹ These customers could include individuals, businesses, nonprofits, and other groups. Department of Energy, <https://www.energy.gov/communitysolar/community-solar>

⁶⁰ Benefits could include bill credits, community resilience (if paired with storage), local workforce development targeted at diversifying the workforce, lease payments to the town, or ecosystem services (ex. pollinators, agrivoltaics), among others.

This input should represent a diverse array of perspectives, aligned with at least the partners the Department included in the meeting series to develop this report. In developing criteria, at minimum the following issues should be considered:

- Community support and/or engagement during project proposal development
- Potential for local / equitable workforce development
- Other benefits to be delivered to the host community (ex. lease payments or tax benefits, investment in community resources)
- Location of the project (including issues such as whether it is a preferred site under 24 V.S.A § 4352 or whether the project is in a constrained area of the distribution or transmission system)
- Operations & maintenance plan for the project throughout its lifetime, including decommissioning
- Generation profile
- Cost of electricity delivered by the project

In developing the program, the PUC should consider whether there should be a provision for distribution utilities to opt out of the program if they can demonstrate they are meeting the program objectives through alternative, more cost-effective program offerings.

Rationale for Recommendation:

The Department makes this recommendation for several reasons:

First, this recommendation is consistent with the Department’s RE4C proposal, introduced in the 2024 legislative session, that flowed from the work conducted during the renewable and clean energy policy and program review.⁶¹ This work was informed by extensive public engagement work, where the Department heard preferences for community-scale resources and efforts to support disadvantaged Vermonters, and research on best practices in supporting community solar.⁶²

Second, this approach to developing community-benefiting renewable energy has been reinforced by engagement with partners throughout the Act 179 meeting series, aligning with the four guiding principles that emerged from those conversations. For example:

- Generation developed through the RE4C program would be evaluated transparently against a set of criteria co-developed by stakeholders and approved by the PUC during the proceeding.
- The RFP approach aligns with the Department’s understanding of how utilities will likely approach procuring RES Tier II (distributed generation) resources to meet their obligations but on a pre-determined schedule, helping partners interested in developing projects to understand when projects will be solicited

⁶¹ Materials from this process are available at <https://publicservice.vermont.gov/renewables>

⁶² Example resources include *Designing Community Solar Programs that Promote Racial and Economic Equity* developed by the Institute for Local Self Reliance (2020, available here <https://ilsr.org/articles/report-designing-community-solar-programs-that-promote-racial-and-economic-equity>) and *What is Equitable Community Solar*, a primer by the Initiative for Energy Justice (2023, available at <https://iejusa.org/wp-content/uploads/2023/12/IEJ-ECS-Primer.pdf>).

- The RFP approach also continues to provide utilities with flexibility to manage the process, similar to normal solicitations. The Department envisions that utilities would sign power purchase agreements (“PPAs”) directly with the selected projects. The project ownership structure and flow of benefits to communities would be outlined in a project’s RFP proposal. This both offers flexibility in design and the ability for innovative approaches for delivering benefits of investing in renewables to communities and achieving the objectives outlined in Act 179 to emerge organically.
- The RE4C approach seeks to minimize costs associated with the program. Compensation for the projects would be determined through a competitive RFP process. Although these costs would possibly be higher cost than other utility solicitations purely driven by least-cost directives, the projects would likely be closer to market-rate than the previous GNM program and additional costs would be offset by cost reductions via reform of the net-metering program and other cost containment mechanisms. (See Recommendation 2).

Third, the RE4C approach works within the framework of the established RES. It does so by setting the eligibility for projects to align with Tier II, offering the flexibility to accommodate larger projects beyond the current 500 kW size cap included in the net-metering program. This supports capturing efficiencies of scale with regards to development and the potential to maximize the benefits flowing to participants.

The program would be modeled off the Standard Offer program, which sought to develop small-scale (less than 2.2MW) renewable generation through a reverse auction approach. However, while in RE4C the PUC would manage the design of parameters to which utilities must adhere, the utilities themselves would issue solicitations, not the PUC. This will allow more control over siting of projects where it makes sense given existing grid infrastructure and expedite and reduce administrative costs of the process. Learning from the Standard Offer program, RE4C does not administratively set prices (and thus removes the threat of litigation associated with federal preemption) and it avoids costs associated with an unnecessary third-party administrator and other administrative needs.

Recommendation 2: Reform compensation in the net-metering program and implement other renewable energy policy cost containment mechanisms.

The Public Utility Commission should open a proceeding to reform compensation in the net-metering program to appropriately reflect the value that generation provides to ratepayers. In doing so, the PUC should consider whether compensation reform should be combined with other changes to the program, including lifting the 500 kW size limitation and/or reinstating virtual group net-metering if compensation reform reflects the value of generation.

Rationale for Recommendation:

Coupled with the establishment of the RE4C program, reform of the net-metering program will support continued pathways for Vermonters to develop small-scale renewable energy while also redressing current inequities in the program that regressively shift cost burdens onto ratepayers who do not participate in the program. While the sunseting of the virtual GNM program sought to

partially address this inequity, reform of the compensation structure for the program would do so more comprehensively. Throughout the meeting series, the Department heard from partners that sunseting GNM while allowing the net-metering program to continue unfairly sought to, and potentially exacerbated, address existing inequities in the program. Reforming net-metering compensation would work to reduce the cost shift associated with the current compensation paradigm, appropriately valuing generation based on energy-related value (considering issues such as timing, location, and environmental attributes) separately from other public policy objectives.⁶³

In the interim, one-time federal funding will offer support to programs such as ACRE, Solar for All, and affordable housing electrification incentives that allow affordable housing and other communities to be adequately, if temporarily, served under the existing net-metering construct. Comprehensively reforming net-metering compensation would enable consideration of the restoration of virtual GNM as a mechanism to develop projects when it is cost-effective to do so, especially if paired with lifting the size cap for net-metering systems.

Other cost containment mechanisms include lowering the alternative compliance payment for utilities to procure renewable energy to meet RES Tier II requirements and to create off-ramps for utilities to purchase in-state generation (shifting requirements to purchase out-of-state, if such purchases are more cost effective) if transmission and distribution costs become too high. Both of these cost containment mechanisms were proposed by the Department as part of the legislative process to support Act 179.

Recommendation 3: Alternative mechanisms should be considered to broadly support the financial barriers to advancing decarbonization and electrification of buildings.

The best way for a group net-metering successor program to help affordable housing and others facing financial barriers to electrification is by ensuring that net-metering and other renewable energy programs do not increase electric rates more than absolutely necessary. The goal should be to reduce the cost of electrification measures in a manner that avoids increasing the cost of electricity, which would increase the cost of electrification.

Rationale for Recommendation:

The Department understands that the affordable housing community sees a need for greater financial support of building decarbonization and electrification, particularly in natural gas service territory, given the relatively higher costs currently associated with both upfront investments in air-source heat pumps and ongoing operations and maintenance costs. The Department has anecdotally heard this concern extends to other communities, such as municipalities, as well. Currently, the ability to offset building electricity bills through both onsite and offsite net-metering projects helps reduce building and operational costs associated with heating with heat pumps. However, there are alternative program models that offer the ability to support investing in building decarbonization and electrification technologies and/or reducing building operating costs that do

⁶³ Doing so would mirror steps taken by other states with advanced penetration of distributed generation, such as New York, Massachusetts, and California with the ability to build off of lessons learned in those contexts.

not create a cross subsidy to non-participating customers, as the current net-metering program (including virtual GNM) does.

Current programs directly targeting electrification costs include the RES Tier III program, energy efficiency utility (EEU) incentives, and significant federal funding that is expected to be available in 2025 (including \$10 million specifically targeted to support affordable housing heating electrification, in addition to the \$22 million Solar for All Managed Affordable Solar Housing (MASH) program).

Alternative solutions to virtual GNM could include changes to EEU incentives and/or the current Tier III program under the RES to specifically target communities in need of greater support, solutions that may emerge organically if the CHS or an alternative policy moves forward, expansion to existing utility Energy Assistance Programs to ensure income eligible multifamily, master-metered buildings meeting certain criteria can participate in the program, and consideration of alternative electric rate designs targeted at reducing rates for income-qualified customers heating with electricity.⁶⁴ The Department expects that the forthcoming *Energy Cost Stabilization* study⁶⁵ from the PUC, due to the legislature in December 2025, will more comprehensively review the landscape of programs that currently exist or could exist to support this objective while also seeking to reduce energy burden in Vermont.

⁶⁴ For example, Massachusetts docket D.P.U. 24-15 was opened in January 2024 to examine energy burden in the state, focusing on affordability for residential customers. Through the docket, the Department of Public Utilities (DPU) is exploring a variety of rate designs including income-based and tiered rates.

⁶⁵ Act 142 of 2024 tasks the Public Utility Commission with “study[ing] current and potential future programs and initiatives focused on reducing or stabilizing energy costs for low- or moderate-income households and...make[ing] a determination as to whether a statewide program to reduce energy burden is needed in Vermont.” Additional details on the study are available at <https://legislature.vermont.gov/Documents/2024/Docs/ACTS/ACT142/ACT142%20As%20Enacted.pdf>

Appendices.

Several appendices offer supplemental material to this report:

- **Appendix A:** Partner Meeting #1 Department of Public Service Slides - Frames the context for the report, with notes from the meeting discussion about impacts and prioritization
 - *Appendix A is available here: <https://publicservice.vermont.gov/document/appendix-a-act-179-report>*
- **Appendix B:** Partner Meeting #2 Brainstorm - Illustrates the output of a brainstorming session where meeting participants considered pros, cons, and remaining questions about how current program models lead to economic, social, and environmental impacts
 - *Appendix B is available here: <https://publicservice.vermont.gov/document/appendix-b-act-179-report>*
- **Appendix C:** Meeting 3 Discussion Questions & Program Summary - Provided by the Department to meeting participants summarizing presentations from Meeting 2 and offering discussion questions for Meeting 3.
 - *Appendix C is available here: <https://publicservice.vermont.gov/document/appendix-c-act-179-report>*
- **Appendix D:** Partner Meeting #3 Brainstorm – Includes the output of a discussion about the definitions of program objectives outlined in Act 179 and discussion questions outlined in Appendix C.
 - *Appendix D is available here: <https://publicservice.vermont.gov/document/appendix-d-act-179-report>*
- **Appendix E:** *Renewable Energy for Communities* Draft Language
 - *Appendix E is available here: <https://publicservice.vermont.gov/document/appendix-e-act-179-report>*